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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/529,894

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EXAMINER

LEONARD, MICHAEL L

ART UNIT

PAPER NUMBER

1796

NOTIFICATION DATE

DELIVERY MODE

08/30/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/529,894	<b>Applicant(s)</b> BURCKHARDT ET AL.	
	<b>Examiner</b> MICHAEL LEONARD	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 May 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,4-10 and 21 is/are pending in the application.
- 4a) Of the above claim(s) 11-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 4-10 and 21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 4-10, and 21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. The claims disclose a one-pack polyurethane composition. The disclosure fails to disclose what a pack is and furthermore fails to even mention the polyurethane composition is a one-pack composition. The instant disclosure is concerned with one-component compositions, which is different than one-pack compositions, especially when considering the lack of description for the term pack.

Claims 1, 4-10 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The applicants' are claiming a polyurethane composition as a whole. The terms one-component and one-pack fail to distinctly claim what the applicants' are envisioning as their invention. Furthermore, from the claim language any polyurethane composition that is made from a polyurethane prepolymer, aromatic nitrogen compound, and a bismuth compound will meet this claim language,

even a composition made from two separate reactants that have been stored in separate containers for day, weeks, or months, once mixed meets the polyurethane composition claimed in instant claim 1. In conclusion, the terms one-component and one-pack do not appear to further limit the claims by providing a nexus between the preamble and the body of the claim with regard to the alleged "one-pack"/"single pack" aspect of the invention. In other words, it is vague and indefinite how the polyurethane composition produces the one pack/single pack of the instant invention.

For purposes of examination and to advance prosecution, the preamble will be examined as if the polyurethane composition produces the claimed pack.

Claims 1, 4-10, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,788,083 to Dammann et al. in view of U.S. Patent No. 3,635,906 to Jayawant. and U.S. Patent No. 4,322,327 to Yoshimura et al.

As to claims 1, 5, 21 Dammann discloses a polyurethane coating and primer composition (Column 11, lines 65) prepared from a hydroxyl containing compound and an isocyanate (Abstract) and a catalyst system which is obtained from a bismuth or tin catalyst, a complexing agent selected from a mercapto group all in the presence of a tertiary amine (Column 2, lines 50-58) wherein the amine activator can be selected from quinoline or isoquinoline (Column 10, lines 61-62).

Dammann discloses a reaction with a mercaptan group to produce a more stable catalyst system that enables the pot life of the polyol/polyisocyanate mixture to be twice as long as the same mixture containing only the tin catalyst (Column 4, lines

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10-17). It would have been obvious to a person of ordinary skill in the art to react a tertiary amine activator such as quinoline or isoquinoline in combination with a stable catalyst as disclosed by Dammann to enhance the conversion of the inactive catalyst species III to active catalyst species II or IV in order to promote a faster reaction between the polyol and polyisocyanate.

It is noted that claim 4 further limits optional component B. However, claim 4 is still rejected under Dammann as being an optional component.

Dammann fails to disclose wherein R7 is OH on the aromatic nitrogen compound.

Jayawant discloses a method for preparing polyurethanes using a tin catalyst in combination with a beta-hydroxy nitrogen-heterocyclic fused aromatic (Column 1, Abstract of the disclosure) such as 8-hydroxyquinolines of the formula presented in Column 7, line 65.

Dammann and Jayawant are analogous art because they are from the same field of endeavor with respect to preparation of polyurethanes using chelate forming catalysts that control the reaction between the polyisocyanate and polyisocyanate-reactive component (Jayawant, Column 1, lines 66-70, Dammann, Column 2, lines 59-62). Dammann and Jayawant disclose the use of tin catalysts in the catalyst systems. Dammann further disclosed that the metal catalyst can contain bismuth, such as bismuth tricarboxylates (Dammann, Column 5, line 5 and 29).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use 8-hydroxyquinoline as disclosed by Jayawant in the catalyst system

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disclosed by Dammann to further aid in the suppression of the reaction between polyisocyanates and hydroxyl-containing compounds, thereby extending the pot life of the reaction medium without retarding the rate of cure, once cure is initiated (Jayawant, Column 1, lines 70-72). Furthermore, 8-hydroxyquinoline results acts as a isocyanate blocking agent which results in a very slowly cured polyurethane prepolymer in the presence of water because the attached blocking groups take time to be removed as evidenced by Yoshimura (Column 4, lines 60-68). As a result, the addition of 8-hydroxyquinoline to the polyurethane reaction products is known in the art to slow down the reaction between isocyanate and isocyanate-reactive components because it acts as a blocking agent first and then as a catalyst second as further evidenced by Yoshimura (Column 4, lines 33-35). Therefore, it would have been obvious to a person of ordinary skill in the art to use incorporate 8-hydroxyquinoline in the catalyst system of Dammann because it is prima facie obvious to add a known ingredient to a known composition for its known function. *In re Lindner* 173 USPQ 356; *In re Dial et al* 140 USPQ 244.

Furthermore, from the claim language any polyurethane composition that is made from a polyurethane prepolymer, aromatic nitrogen compound, and a bismuth compound will meet this claim language, even a composition made from two separate reactants that have been stored in separate containers for day, weeks, or months, once mixed meets the polyurethane composition claimed in instant claim 1. Therefore, the fact that Dammann fails to disclose whether the polyurethane is a one-component or two-component composition is irrelevant.

As to claim 6, Dammann discloses conventional bismuth catalysts, such as, bismuth tricarboxylates (acetates, oleates, etc.) that can be used in the present invention.

As to claim 7, Dammann discloses with respect to the proportions of catalyst system that the tin or bismuth catalyst should be adjusted to be in an effective catalytic amount for the polyol/isocyanate reaction. Typically, this translates into catalyst concentration levels ranging from 0.0001 to about 1.0 weight percent (Column 8, lines 43-47). Dammann further discloses that the catalyst/complexing ratios will vary depending upon the particular tin or bismuth catalyst, the particular mercaptan, and the polyol and polyisocyanate chosen. Generally, the metal content of the catalyst ranges from 2:1 to 500:1 mole ratios (Column 8, lines 55-62). Dammann further discloses that the proportion of the amine activator may range up to 6 percent or more, percentages of less than 1, such as 0.25 will suffice (Column 11, lines 15-19).

As to claim 8, Dammann discloses in formula IV (Drawings section) wherein the tertiary amine activator is bonded to the tin compound. It should be noted that while the tin coordination bond is shown, Dammann discloses even though the foregoing description are illustrative of the present invention include tin as the metal compound, the active metal catalyst may also be bismuth (Column 5, lines 3-5). Dammann further discloses that the isocyanate functionality is reactive with the complexing agent (mercapto group), which enhances the conversion of inactive catalyst species III (tin or bismuth) to active catalyst species IV (Column 4, lines 59-62 and drawings).

As to claim 9, Dammann discloses catalyst systems containing mixtures of tin or bismuth coordinated complexes (Column 2, lines 18-19).

As to claim 10, Dammann discloses drying or curing the coating at ambient temperature (Column 17, Table 13).

Claims 1, 4-10 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,719,229 to Pantone et al.

As to claims 1, 4-5, and 21, Pantone discloses a elastomeric polyurethane prepared by reacting at an isocyanate index of 80 to 120,

- a) an isocyanate prepolymer having an isocyanate content of 3 to 15% by weight, prepared from polyisocyanates and polyester polyols
- b) diol chain extenders
- c) catalyst
- d) surface skinning retardants (Abstract).

Pantone discloses wherein the catalyst can be selected from bismuth catalysts, such as bismuth neodecanoate (Column 4, lines 40-43) and component d) can be selected from mono and dihydric phenols such a 8-hydroxyquinoline (Column 8, lines 60-65).

Pantone fails to disclose via an example the combination of a bismuth catalyst with the 8-hydroxquinoline, but does disclose wherein 8-hydroxquinoline is used (See Examples 61-65) in combination with other catalysts that are present in the same list as the bismuth carboxylate catalyst. Therefore, the applicants' invention can be arrived at



solely by selecting from the various catalyst choices disclosed by the reference. The various choices are set out in the reference as workable and hence no skill in the art is required.

The Pantone reference teaches suitable polyurethane catalysts; as such a prima facie case of obviousness exists over the combination. Though picked from a laundry list, it has been held that though a specific embodiment is not taught as preferred makes it no less obvious, also, the mere fact that a reference suggests a multitude of possible combinations does not in and of itself make any one of those combinations less obvious, see *Merck v. Biocraft*, 10 USPQ2d 1843 (Fed Cir 1985).

Furthermore, the fact that Pantone fails to distinguish between one and two component compositions still does not distinguish the claims from the prior art because the composition as a whole is met. It does not matter whether the two reactive components were stored separately and then mixed and cured. The fact remains that the composition as a whole is met by the Pantone reference. The claims only require the total composition.

Also, the claims seem to disclose an intended use for the polyurethane composition. Case law holds that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See MPEP 2111.02, *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). In the instant case, there are no structural differences

between the polyurethane prepolymer of the instant claims and the polyurethane prepolymer of the Patone reference.

As to claim 6, Pantone discloses bismuth carboxylates (Column 7, lines 15-20).

As to claim 7, Pantone discloses a ratio 0.0001 to 10% by weight of component c) is present and from 0.01 to 5% by weight of component d) is present.

As to claim 8, Pantone discloses the same bismuth and aromatic nitrogen component; therefore the two would obviously form bonds.

As to claim 9, Pantone discloses mixtures of catalysts, which also include tin catalysts (Column 7, lines 10-15).

As to claim 10, Pantone discloses moisture-cured polymers (Column 9, lines 60-63).

Claims 1, 4-10 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,322,327 to Yoshimura in view of U.S. Patent No. 5,719,229 to Pantone et al.

As to claims 1, 4-5, 10, and 21, Yoshimura discloses a slow-curing water-curable urethane prepolymer composition obtained by reacting a hydrophilic urethane prepolymers with a blocking agent selected from a class of heterocyclic compounds (Abstract) such as 8-hydroxyquinoline (Column 8, lines 4-24). Yoshimura further discloses that usually no other catalyst is required because 8-hydroxyquinoline acts as the catalyst. However, a known catalyst 1,4-diazabicyclo-[2.2.2]-octane may be used (Column 4, lines 30-35).

Yoshimura fails to disclose the use of a bismuth catalyst.

However, Pantone discloses suitable polyurethane catalysts such as 1,4-diazabicyclo-[2.2.2]-octane (Column 7, lines 28-29) and bismuth carboxylates, such as bismuth neodecanoate (Column 4, lines 40-43).

It is prima facie obvious to add a known ingredient to a known composition for its known function. *In re Lindner* 173 USPQ 356; *In re Dial et al* 140 USPQ 244. In the instant case, the Pantone reference teaches suitable polyurethane catalysts; as such a prima facie case of obviousness exists over the selection of catalysts. Though picked from a laundry list, it has been held that though a specific embodiment is not taught as preferred makes it no less obvious, also, the mere fact that a reference suggests a multitude of possible combinations does not in and of itself make any one of those combinations less obvious, see *Merck v. Biocraft*, 10 USPQ2d 1843 (Fed Cir 1985).

Furthermore, the fact that Yoshimura fails to distinguish between one and two component compositions still does not distinguish the claims from the prior art because the composition as a whole is met. It does not matter whether the two reactive components were stored separately and then mixed and cured. The fact remains that the composition as a whole is met by the Yoshimura reference. The claims only require the total composition.

As to claim 6, Pantone discloses bismuth carboxylates (Column 7, lines 15-20).

As to claim 7, Pantone discloses a ratio 0.0001 to 10% by weight of component c) is present and from 0.01 to 5% by weight of component d) is present.

As to claim 8, Pantone discloses the same bismuth and aromatic nitrogen component; therefore the two would obviously form bonds.

As to claim 9, Pantone discloses mixtures of catalysts, which also include tin catalysts (Column 7, lines 10-15).

### ***Response to Arguments***

Applicant's arguments with respect to claims 1, 4-10, and 21 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL LEONARD whose telephone number is (571)270-7450. The examiner can normally be reached on Mon-Fri 7:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on 571-272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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